

CLAIMS

1. I claim the present invention, is a two component, Adjustable Length Cannula(Figure 1) surgical instrument assembly for use in laparoscopic surgery as a conduit through the abdominal body cavity that allows the insertion of various surgical instruments therethrough.
2. I claim the present inventions, components are manufactured of a plastic resin injection molded or of metal components.
3. I claim the present invention, device can be manufactured as a single use disposable instrument.
4. I claim the present invention, can be manufactured as a multi-use instrument made from materials that allow autoclaving by the end user.
5. I claim the present invention, is comprised of a outer body tube(9) that telescopes about an inner body tube(2).
6. I claim the present invention, incorporates a gas seal(4) flare at the distal end of the inner body tube(2) that provides a gas tight seal against the smooth inner bore of the outer body tube(9). The gas seal(4) applies sufficient contact to provide a gas seal while allowing free telescoping movement of the inner body tube(2) and the outer body tube(9) members.
 - 6a. The gas seal(4) is produced by injection molding the thin sealing edge at the distal end of the inner body tube(2) thereby eliminating the need for 'o'-rings or other add-on seal materials or components.
7. I claim the present invention, incorporates a telescoping action feature and is accomplished by a protruding lug(23) within the outer body tube(9) that resides

and is retained within the trough(20) thereby eliminates the possibility of separation of the inner body tube(2) and the outer body tube(9) components.

8. I claim the present invention, position locking or securing is accomplished by multiple twist-lock receivers(3) located and connected perpendicular to the trough(20). The twist-lock receivers(3) have a generous taper or radius entrance(25) allowing a non-specific position alignment of the desired length but within the general area of the lug(23) to the twist-lock receivers(3) entrance.

9. I claim the present invention, position or length indicators of printed, labeled or engraved means can be applied to assist the user in finding the approximate location of the entrance of the twist-lock receivers(3).

10. I claim the present inventions, trough(20) provides a slot and a smooth lug stop/wall(16) for the lug(23) to traverse against during the telescopic movement of the inner body tube(2) and the outer body tube(9) members.

11. I claim the present inventions, lug detent(18) and a lug detent ramp(19) provide the means to engage and secure the lug(23) with a felt click and a firm stop of travel by the lug stop/lock wall(16).

12. I claim the present inventions, eight slots (more or less) about the conical taper(7) of the distal end provide a means of flexing the plastic without damage while extracting the coring pin method used during the injection molding process of the outer body tube(9).

13. I claim the present inventions, cannula head(1) instrument gas sealing assembly can be of various designs thereby not limiting this device to a specific manufacture.